Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

ORIGINAL

In the Matter of	
Preparation for International Telecommunication Union World Radiocommunication Conferences	IC Docket No. 95-31

COMMENTS OF ORBCOMM ON THE SECOND NOTICE OF INQUIRY

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SUMMARY

The United States enjoyed significant success at WARC-92 in obtaining global allocations of spectrum below 1 GHz for non-geostationary satellite systems. The Commission should seek at WRC-95 to build on those successes. There are several improvements the Commission should strive for which will enhance the utility of the WARC-92 allocations. ORBCOMM urges the Commission to adopt a U.S. position at WRC-95 (i) to seek a global allocation of the 399.9-400.05 MHz band, (ii) to modify the secondary status of the allocations in the 137-138 MHz band to account for the transitioning of the MetSats out of that band; (iii) to obtain a generic allocation for MSS in the 149.9-150.05 MHz band; and (iv) to seek the elimination of the footnote 608C reservations.

ORBCOMM also agrees with the assessment of the Industry Advisory Committee that an additional global allocation of 10 MHz below 1 GHz will be necessary by the year 2000, with a further 10-13 MHz allocation below 1 GHz by the year 2010. The high level of interest in the United States (with five new applications in the second processing round) and in other countries supports such a need. ORBCOMM also agrees with the prioritization of possible bands suggested by the IAC, recognizing the need to coordinate with the other U.S. government users.

ORBCOMM also suggests some changes to the Resolution 46 procedures to allow them to work even more effectively. An

Administration that believes it might be affected by a non-GSO satellite system should be required to provide a detailed analysis supporting its concerns. ORBCOMM also strongly urges the Commission to seek changes to the restrictions in Footnotes 608A and 608B. ORBCOMM believes that the -150 dBW/m^2/4 kHz limit should be treated as a coordination trigger and not a strict limit.

In addition, ORBCOMM urges the Commission to take steps to ensure that the review of the Voluntary Group of Experts concerning reform of the international regulations not preclude the conference from addressing the important MSS issues. Finally, ORBCOMM suggests that the Commission utilize conference preparatory procedures that are matched to the new two-year cycles. ORBCOMM believes that these suggestions, taken together, will allow the manifold benefits of NVNG satellite services to be realized throughout the globe.

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COMMENTS OF ORBCOMM ON
THE SECOND NOTICE OF INQUIRY

Orbital Communications Corporation ("ORBCOMM"), a wholly-owned subsidiary of Orbital Sciences Corporation ("OSC"), hereby comments on the Second Notice of Inquiry addressing the upcoming 1995 World Radiocommunication Conference ("WRC-95") and subsequent conferences.[1/] As a leader in the development of commercial low-Earth orbit mobile satellite services, ORBCOMM is very interested in this proceeding.[2/]

1/ Preparation for International Telecommunication Union World Radiocommunication Conferences, IC Docket No. 94-31, FCC 95-36, released January 31, 1995 ("Second NOI").

2/ ORBCOMM recently became the first licensee in the Non-Voice, Non-Geostationary ("NVNG") mobile satellite service. Orbital Communications Corporation (Order and Authorization), 9 FCC Rcd 6476 (1994). ORBCOMM expects to launch the first two satellites in its constellation within the next few weeks, and service will be available shortly thereafter.

ORBCOMM has been an active participant in previous World Radiocommunication Conference proceedings at the Commission, and at the World Radiocommunication Conferences themselves. ORBCOMM has also participated extensively in the Informal Working Groups ("IWGs") of the Industry Advisory Committee providing guidance to the Commission in developing U.S. positions at WRC-95 and subsequent conferences. In addition, ORBCOMM submitted comments in response to the initial Notice of Inquiry in this proceeding.[3/] ORBCOMM recognizes, in light of the global nature of non-geostationary ("non-GSO") satellite systems, that the upcoming radiocommunication conferences are critical to the successful introduction and growth of ORBCOMM's services.

As detailed herein, ORBCOMM urges the Commission to develop U.S. positions at WRC-95 that will build on the successes attained at WARC-92, and thereby foster the global availability of Non-Voice, Non-Geostationary satellite services. The Commission recognizes the public interest benefits of these mobile satellite services.[4/] The Commission must ensure that

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3/ Comments of ORBCOMM in IC Docket No. 94-31, submitted July 15, 1994.

4/ See generally, Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum to the Fixed-Satellite Service and the Mobile-Satellite Service for Low-Earth Orbit Satellites, 8 FCC Rcd 1812 (1993); Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service, 8 FCC Rcd 8450 (1993); Orbital Communications Corporation (Order and Authorization), 9 FCC Rcd 6476 (1994).

international regulation does not impede the development and growth of these offerings. It is equally important that the Commission seek to ensure that there will be adequate global allocations of spectrum to meet the expected demand for these services.

The Commission Should Strive for Improved Spectrum Availability at WRC-95

The United States was relatively successful at WARC-92 in developing a worldwide consensus on the need for non-GSO satellite service allocations below 1 GHz for non-voice services. Despite the novel nature of these commercial satellite systems, WARC-92 allocated some 9.9 MHz of spectrum below 1 GHz for non-GSO satellite systems. However, only 3.6 MHz was allocated on a primary or co-primary basis, with the other 6.3 MHz allocated on a secondary basis. ORBCOMM recognizes that the need to share the spectrum with other services is a continuing reality, and that this will severely constrain the ability of the non-geostationary mobile satellite systems to use those allocations. ORBCOMM is painfully aware of the limitations of the allocated NVNG spectrum, having had to make numerous compromises in its satellite system in order to ensure that ORBCOMM and the other first round applicants can all be accommodated.

ORBCOMM thus believes that while the initial allocation of spectrum below 1 GHz for LEO satellite services will allow several systems to implement their first generation systems, the

current spectrum will be inadequate to accommodate the anticipated growth in the number of systems and the level of capacity demanded by NVNG mobile satellite service ("MSS") subscribers. ORBCOMM believes that its predictions on the enormous worldwide demand have been confirmed by the significant number of companies proposing to construct, launch and operate NVNG satellite systems in response to the Commission's opening of a second processing round. Five new companies submitted applications (and application fees of nearly a quarter million dollars each) seeking NVNG MSS licenses.

In addition, ORBCOMM expects that a significant number of other countries will also seek to launch below 1 GHz non-GSO satellite systems. Numerous countries have expressed a serious interest in this new technology, and are likely to authorize additional systems.[5/] Finally, ORBCOMM anticipates a need for additional spectrum to support the second generation of NVNG satellite systems when the initial systems reach their end of life early in the next century. ORBCOMM expects to experience significant increases in subscribers once the capabilities of LEO satellite systems have been demonstrated through the deployment of commercial systems. In order to meet that surge in demand, ORBCOMM will need to construct larger, more sophisticated second-

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5/ Outside the United States (which has begun ITU coordination for three systems), seven systems from four countries have been advance published. Indeed, in addition to the United States, some twelve countries have announced below 1 GHz non-GSO satellite systems: Australia, Belgium, Brazil, France, Germany, India, Italy, Korea, Mexico, Russia, Tonga and Uganda.

generation spacecraft that will be capable of providing significantly greater capacity. In order to make full use of such an advanced satellite system, ORBCOMM expects to require access to additional spectrum.

In light of these expectations of rapid growth, reinforced by the heightened interest in NVNG services within the United States and abroad, ORBCOMM fully supports the Industry Advisory Committee ("IAC") projections of a need for an additional 10 MHz of primary or co-primary spectrum below 1 GHz by the year 2000, and a further allocation of 13-20 MHz below 1 GHz by the year 2010.

ORBCOMM also echoes the IAC's recommendations to make the current allocations more functional through a few relatively minor changes. ORBCOMM thus urges the Commission to seek an international allocation of the 399-400.15 MHz band to non-GSO satellite services. This band is allocated to NVNG satellite services within the United States, but not on a global basis. Similarly, ORBCOMM supports the proposal to modify the allocations within the 137-138 MHz band to reflect the migration of the MetSat satellites.[6/] ORBCOMM recognizes the need to provide protection to the MetSat operations, although the Commission should seek as short a transition period as possible in order to speed the availability of spectrum in the 137-138 MHz band for NVNG downlinks.

6/ Second NOI at ¶ 17.

Another relatively minor change to the existing below 1 GHz non-GSO satellite service allocations with which the United States would likely have success at WRC-95 is a modification of the 149.9-150.05 MHz allocation to specify that the band can be used for generic mobile satellite services, rather than limited to land mobile satellite services as currently written. The demand for non-GSO satellite services is likely to extend beyond land mobile services to include maritime or aeronautical services as well. The current restriction needlessly hampers the ability of the low-Earth orbit satellite service provides to meet the demand for additional services.

ORBCOMM also urges the United States to seek the elimination of Footnote 608C. The ability of NVNG satellite services to coexist with terrestrial services makes the reservations by those countries unnecessary. ORBCOMM believes that the availability of actual operating experience by the time WRC-95 convenes will demonstrate that Footnote 608C can safely be deleted.

While these relatively minor changes will prove helpful, they fall far short of the need to allocate an additional 10 MHz of spectrum below 1 GHz for NVNG satellite services by the year 2000 (and a further allocation of 13-20 MHz by the year 2010). ORBCOMM believes that the IWG did an excellent job of identifying potential spectrum and prioritizing the utility of the candidate bands.

ORBCOMM conducted a very extensive analysis of frequencies below 1 GHz that were suitable for its proposed services as a preliminary step in filing the original petition for rulemaking for what became NVNG satellite services. Not surprisingly, there was not then, and still is not now, any large bands of unused spectrum below 1 GHz. The most promising spectrum identified by the IWG that may alleviate the shortage in the near term are frequencies that are allocated within the United States on a shared or exclusive basis to the U.S. government.[7/] ORBCOMM urges the Commission to continue discussions with NTIA to determine whether the government users can be convinced that sharing the band is possible without compromising or jeopardizing government activities.

As the recent federal legislation mandating the reassignment of government spectrum demonstrates, however, the public interest can be significantly advanced by such sharing. Moreover, the particular benefits of NVNG satellite service, including job creation, the extension of communications services to previously unserved areas of the globe, the availability of new, efficient services, and even the potential to save lives, are dependent on the availability of spectrum. Those important

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7/ In the longer term, the deployment of new digital broadcasting services should free up valuable spectrum. The Commission should consider this as a potential source of spectrum to meet the needs of NVNG satellite services in the years 2010 and beyond. In this manner, the benefits of new digital broadcasting techniques, including requirements for less spectrum, can be shared by the public at large rather than being restricted merely to broadcasters.

benefits, along with operating information that should be able to demonstrate an ability of NVNG satellite systems to share with terrestrial operations, should prove helpful in the Commission's discussions with NTIA. Although there do not appear to be any "easy solutions," ORBCOMM believes that the need for additional spectrum for NVNG satellite services has been amply demonstrated.

ORBCOMM Believes that Some Refinements to Resolution 46 Procedures are Necessary

ORBCOMM argued in its initial comments in this proceeding that the Commission should seek refinements to the Resolution 46 procedures, rather than a wholesale abandonment or replacement of those procedures. ORBCOMM's own experiences confirm that the process can be a workable means of coordinating non-GSO satellite systems, which are global by their nature. Those same experiences, however, also reinforce the need to make some changes so that the process can work more efficiently.

In this regard, ORBCOMM agrees with the proposed refinements suggested by the IAC set forth in the Second NOI. The Appendix 3 information requirements should be expanded so that power flux density ("PFD") levels can be calculated on a dynamic basis.[8/] In this manner, a more realistic picture can be obtained on the potential for interference. In contrast, the

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8/ Second NOI at ¶ 38.

current information tends to produce only a static, worst case scenario.

Conversely, ORBCOMM believes that any Administration that seeks coordination of the non-GSO satellite system should provide detailed information establishing the basis for its belief that it may be adversely affected by the satellite system. In particular, ORBCOMM believes that an Administration should be required to provide a detailed description of the parameters of the potentially affected services and an interference analysis calculating the expected levels of harmful transmissions expected, including a description of the model used to calculate the anticipated interference levels.

Requiring the Administration to "do its homework" as part of the Resolution 46 procedure should speed the coordination process and also minimize wasted efforts responding to generalized and unsupported claims of potential interference. The intent of Resolution 46 was to attempt to identify and isolate the potentially affected Administrations for these global non-GSO satellite systems which will be overflying virtually every country in the world. Mere speculation or concern about interference, standing alone, should not be a sufficient basis to trigger coordination discussions. ORBCOMM believes that these refinements to the Resolution 46 procedures will make the global coordination of non-GSO satellite systems much more manageable.

Additional Proposals for WRC-95

ORBCOMM also supports the other recommendations of the IAC with regard to below 1 GHz low-Earth orbit satellite systems. ORBCOMM believes that Footnotes 608A and 608B should be altered. The current restrictions are couched in terms of being absolute limits on transmissions across borders. The -150 $dBW/m^2/4$ kHz limit is unworkable as presently structured. ORBCOMM believes that the adjacent country issues are better handled by treating the "limit" as a coordination trigger, rather than as an absolute (and unenforceable) ceiling on NVNG transmitters.

ORBCOMM suggests that these footnotes should be applied in the same manner in which border sharing arrangements are dealt with today. ORBCOMM does not believe that the terrestrial transceivers used in connection with low-Earth orbit satellites require any different or special treatment. There are standard, well-accepted formula for determining coordination zones, and they should apply here as well.

ORBCOMM also agrees with the concerns that the review of the report of the Volunteer Group of Experts ("VGE") must not hinder WRC-95's consideration of these important mobile satellite services issues. The goal of the VGE Report is a laudable one, simplifying the international regulations without making substantive changes. ORBCOMM believes that such a review could distract the WRC from the more time-sensitive goals of addressing mobile satellite service issues, however. Thus, ORBCOMM suggests

that the Commission seek to have consideration of the report addressed by a separate working group, or deferred altogether. This will allow the focus of WRC-95 to remain on the substantive mobile satellite services issues.

The Commission Should Utilize WRC Preparatory Processes Matched to the New Biennial Conference Schedule

The Second NOI also seeks comment on possible improvements to the WRC preparatory process in light of the decision to convene radiocommunication conferences every two years.[9/] The Commission indicated that it intends to expand the charter of the IAC to make it a more permanent body. The Commission also underwent a reorganization so that the International Bureau now includes all of the conference related groups. ORBCOMM believes that these steps should allow both the Commission and the United States to be more effective participants in the WRC process.

ORBCOMM also urges the Commission to further enhance the effectiveness and efficiency of the preparatory process by working through smaller, focussed groups during the stages leading up to the conference. The Industry Advisory Committee process should be organized on an issue basis, whereby smaller industry/government teams can focus on specific allocation and regulatory matters in parallel up until the final delegation

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9/ Second NOI at ¶ 108.

review sessions. During the presentations for WARC-92, this approach was adopted only at the ad hoc working group level. By organizing as suggested, the process can be streamlined through more efficient use of participants' time and interaction through smaller, more manageable working groups.

ORBCOMM recognizes that this approach would require that the leadership of the industry and government teams meet regularly to assure coordination across issue boundaries. However, ORBCOMM believes that the overall time required of all parties would be reduced by this approach when compared to the process used to prepare for WARC-92. This suggested team approach to be used for preparations could then be carried over into the WRC process itself, with the team leaders and the basic support structure that prepared the U.S. positions representing the United States at the conferences. This type of organization might also serve to reduce the U.S. management "overhead" at conferences to a head of delegation plus four vice heads of delegation. The vice heads would be responsible to coordinate and oversee the negotiations and activities of the issue teams with respect to regulatory, allocation, technical and editing matters. These issue teams could be established on a semi-permanent basis with chairs and committee heads, if required, appointed for periods of two years. This structure would address the requirement to maintain a core preparation capability needed to cope with the biennial WRC schedule. The technical Study Groups operate on an on-going basis in a similar manner.

Finally, ORBCOMM remains concerned about the apparent limitation of government representation at World Radiocommunication Conferences to ten persons. While ORBCOMM recognizes that the government in general faces budget constraints, the costs of government employee attendance at the conferences is properly recovered through the application and regulatory fees collected by the Commission, and therefore is fully in line with recent efforts at reinventing government. More importantly, it is critical that the United States bring adequate resources to the conferences in order to safeguard and advance U.S. interests.

At present, the United States is faced with competition from countries and alliances of countries around the world who will have the capability to out maneuver the U.S. team if it is limited to only ten persons. Industry representatives are not authorized to speak for the U.S. government, although their presence and support is essential to explain the U.S. positions and to provide the required technical back-up. The structure of the WRCs requires the simultaneous presence of government participants at multiple working sessions and other events. A ten person U.S. team cannot possibly cover these activities and be knowledgeable about the numerous negotiations going on at any one time. By artificially limiting the U.S. delegation, the United States would be abdicating its influential position to the Europeans (i.e., CEPT) and other foreign delegations who have the personnel resources and are willing to expend the relatively

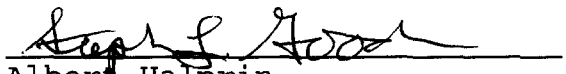
modest sums to engage simultaneously all the important regulatory, allocation, technical and editing requirements that arise at radiocommunication conferences. The European presence poses a special challenge to the United States, as with almost 50 member states of the CEPT, the unified European position would outnumber the U.S. presence by over 50 to 1. ORBCOMM therefore urges the U.S. government to rescind or waive the ten person restriction at WRC-95 (as well as the preparatory conferences), and decide upon the appropriate delegation size based on the agenda content of each conference.

CONCLUSION

ORBCOMM urges the Commission to build upon the successes of WARC-92, and to seek changes at WRC-95 that will help ensure the continuing development of NVNG satellite services on a global basis. In this regard, ORBCOMM suggests some changes to make the initial allocations more useful, and to seek additional allocations below 1 GHz to meet the expanding demand for these services. ORBCOMM also suggests some refinements to the international footnotes and procedures to facilitate the global coordination of these important satellite services. By taking these suggested actions, the Commission will ensure that all of the benefits of low-Earth orbit satellite services can be realized in the United States, including the creation of new

jobs, the provision of valuable services to unserved and underserved markets, and the development of export opportunities.

Respectfully submitted,

By 

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